

REMARKS

Rejoinder

Claims 3, 7-12 and 20-25 are withdrawn. All of claims 3, 7-12 and 20-25 depend directly or indirectly from claim 1, which is submitted to be allowable as discussed below. Accordingly, the Applicant respectfully requests rejoinder of claims 3, 7-12 and 20-25.

Compliance with 35 U.S.C. §103

Claims 1, 2, 4-6, 13-19 and 26-32 stand rejected under 35 U.S.C. §103(a) in light of U.S. Patent No. 7,450,104 to Baik ("Baik") and U.S. Patent No. 6,817,717 to Childers et al. ("Childers"). The Applicant respectfully requests reconsideration and withdrawal of these rejections in light of the following.

Claims 1-28

Claim 1 recites a method comprising, *inter alia*, "calculating a key frame luminance map corresponding to light incident on the second modulator when the first modulator is driven by the key frame first modulation signal." The Office Action acknowledges that Baik fails to disclose this feature, but cites Childers, at column 2, lines 35-50 and Figure 1, as disclosing this feature. The Applicant respectfully submits that Childers does not remedy the deficiency of Baik.

Childers, as understood, discloses a display system (10) comprising a color light source (20) which produces a "low-resolution color light array," which is directed onto a high-resolution light modulator (22). As stated at col. 2, ln. 55-65:

"[T]he low-resolution color modulator typically generates a low-resolution color light array that corresponds to a coarse, colored image on a screen. The high-resolution light modulator refines the coarse image such that the image appears finely resolved with minimal color artifacts. In other words, the high-resolution light modulator is configured to receive the low-resolution color light array, and to produce a higher-resolution color light array. Thus, appropriate control of the high-resolution light modulator may enhance the overall appearance of the image."

The Childers display system (10) may comprise a controller (24) configured to manage generation of an image. Childers says at col. 3, ln. 10-20:

“Specifically, controller 24 may manage both low-resolution color modulator 18 and high-resolution light modulator 22. For example, in some embodiments, controller 24 may manage the low-resolution color modulator such that the light is both color and spatially separated to produce a low-resolution image. Moreover, where high-resolution light modulator 22 includes a micromirror array, controller 24 may be configured to independently actuate the micromirrors of the micromirror array to define the final image and to control the color and intensity of such image on the screen.”

Childers discusses control of the high-resolution light modulator at col. 7, ln. 15-25:

“[T]he light from the image-generating units produces a low-resolution image. The high-resolution light modulator may then be used to refine the low-resolution image. It should be noted that if the high-resolution light modulator simply reflects all light from the low-resolution color modulator, a low-resolution image will be provided on the screen. By controlling individual mirrors of the high-resolution spatial modulator, it is possible to enhance the low-resolution image produced by the low-resolution color modulator.”

Childers provides little detail on how the display system is controlled and, as understood, specifically does not disclose or suggest calculating any luminance map. Accordingly, Childers fails to teach “calculating a key frame luminance map corresponding to light incident on the second modulator when the first modulator is driven by the key frame first modulation signal,” as recited in claim 1.

Claim 1 also recites “determining a current frame second modulation signal based on the current frame image and the key frame luminance map.” The Office Action cites Baik, at col. 9, ln. 13-21 and Fig. 6, as teaching this feature. It appears that the Examiner is equating the “control value” of Baik with the key frame luminance map recited in claim 1. The Applicant submits that this is an improper characterization of Baik.

The control value of Baik is described at col. 5, ln. 52-58:

“The picture quality enhancer 42 extracts a control value capable of controlling the back light, for example, a most-frequent value (i.e., the gray level value occupied by the maximum number of the brightness components in the frame) and/or an average value (i.e., the average value of the brightness components in the frame), and generates the brightness control signal Dimming using the extracted control value.”

The control value of Baik is thus not a key frame luminance map as recited in claim 1. Baik fails to teach “determining a current frame second modulation signal based on the current frame image and the key frame luminance map,” as recited in claim 1.

Accordingly, the Applicant respectfully submits that claim 1, as well as claims 2-28 which depend therefrom, are patentable over Baik and Childers for at least the reasons set out above.

Claim 29

Claim 29 recites a method comprising, *inter alia*, “determining whether the second modulator is capable of modulating the luminance map to reproduce the an image of the current frame on the display.” The Office Action acknowledges that Baik fails to disclose this feature, but cites Childers, at col. 2, ln. 46-50 and Fig. 1, as disclosing this feature. The Applicant respectfully submits that Childers does not remedy the deficiency of Baik.

The cited passage of Childers states:

“High-resolution light modulator 22 thus may operate to effectively either “shut off” or “turn on” individual pixels. In an “on” state, colored light for a corresponding pixel typically is transmitted from high-resolution light modulator 22 onto a discrete display element on screen 16.”

Childers, as understood, does not discuss determining any capabilities of either of the modulators discussed therein.

Accordingly the Applicant respectfully submits that claim 29 is patentable over Baik and Childers.

Claim 30

Claim 30 recites a method comprising, *inter alia*, “calculating a key frame luminance map corresponding to light incident on the second modulator when the first modulator is driven by the key frame first modulation signal,” and “generating a second modulation signal for each of the plurality of frames based on the image data for each frame and the key frame luminance map.” As discussed above with respect to claim 1, neither Baik nor Childers, as understood, disclose such features.

Accordingly the Applicant respectfully submits that claim 30 is patentable over Baik and Childers.

Claim 31

Claim 30 recites a method comprising, *inter alia*, “calculating a key frame luminance map of light from the first modulator incident on the second modulator,” and, “determining a current frame second modulation signal based on the current frame image and the key frame luminance map.” As discussed above with respect to claim 1, neither Baik nor Childers, as understood, disclose such features.

Accordingly the Applicant respectfully submits that claim 31 is patentable over Baik and Childers.

Claim 32

Claim 32 recites a system comprising, *inter alia*, a processor configured to “calculate a key frame luminance map of light from the first modulator incident on the second modulator,” “determine a key frame second modulation signal based on the key frame image and the key frame luminance map,” and “determine a current frame second modulation signal based on the current frame image and the key frame luminance map.” As discussed above with respect to claim 1, neither Baik nor Childers, as understood, disclose such features.

Accordingly the Applicant respectfully submits that claim 32 is patentable over Baik and Childers.

Conclusion

The Applicant submits that this application is now in condition for allowance. Reconsideration and allowance of this application are respectfully requested.

Respectfully submitted,

By: /Richard A Johnson/
Richard A. Johnson
Registration No. 36,412
tel: 604.669.3432 ext. 9046
fax: 604.681.4081
e-mail: RAJDocket@patentable.com